Leathermaking Environmental Footprint Reduction Strategy

LWG Member Conference 2022 – Environmental Impact Session

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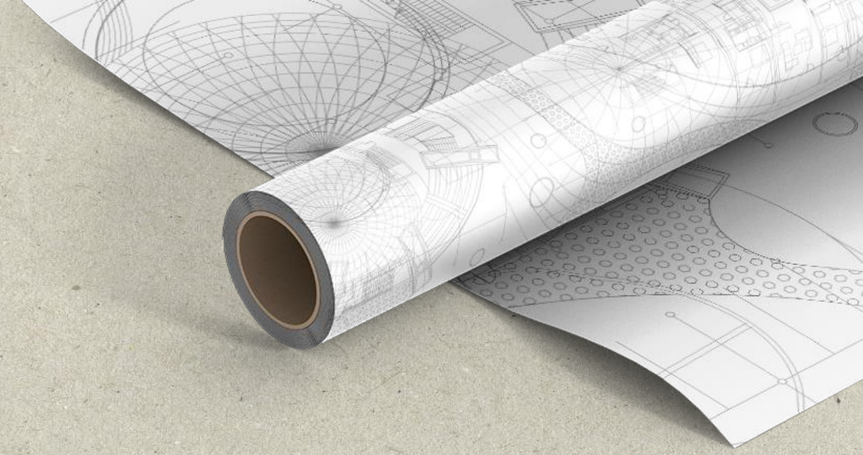
KIND LEATHER®

PATH TO *Net Zero*

JBS will provide a roadmap consistent with the criteria set forth by the Science-Based Targets initiative (SBTi).

OUR *Timeline*



GOAL AND SCOPE
30 PRODUCTS, 6 PLANTS, 4 COUNTRIES

MODELLING & DATA COLLECTION
120 DIFFERENT PROCESSES

DATA ELABORATION & ANALYSIS
94.080 INDICATORS

IMPROVEMENT PLAN
4 KEY ACTIONS

JAN 2021 | APR 2021 | SEP 2021 | JUN 2022

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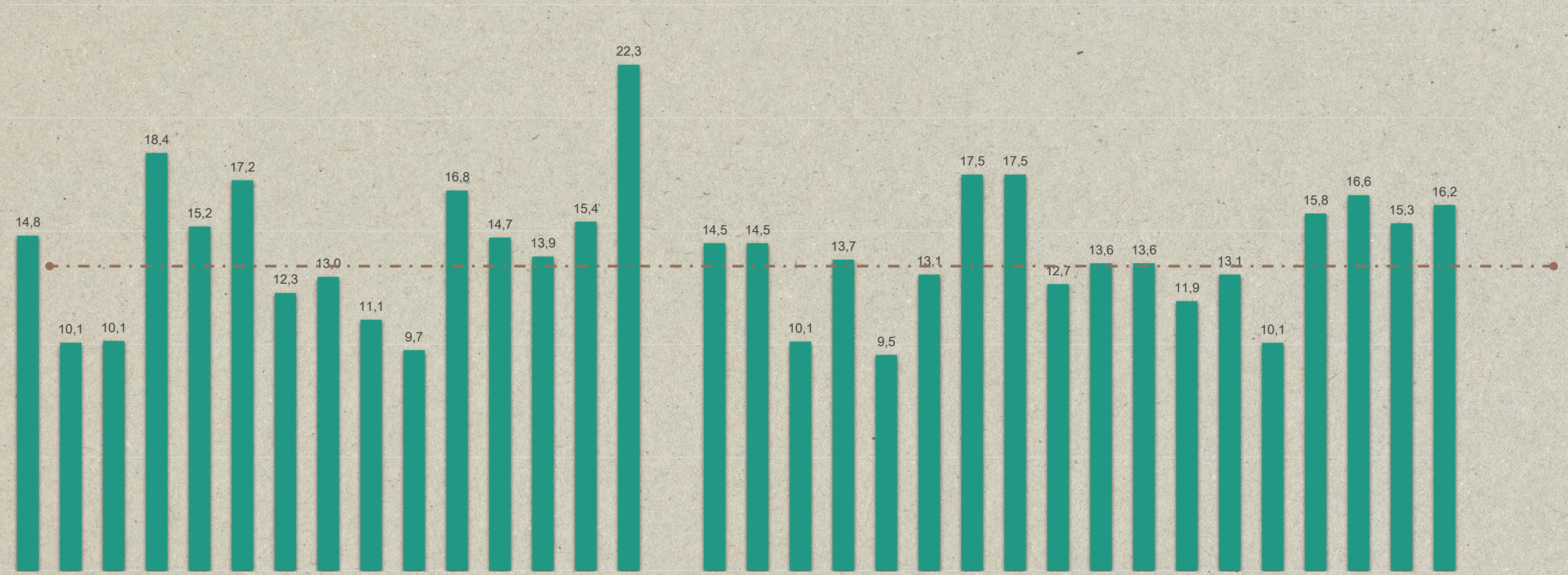
LCA RESULTS *Overview*

GLOBAL WARMING POTENTIAL – kgCO2e/m²



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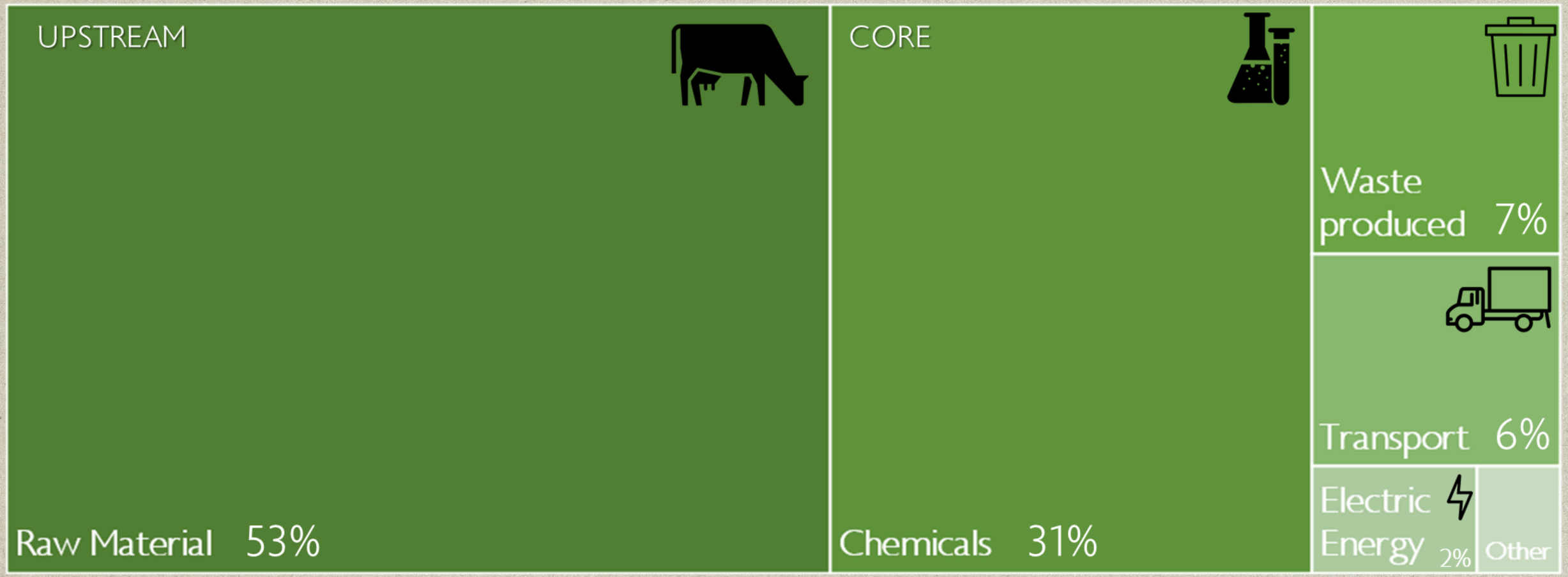
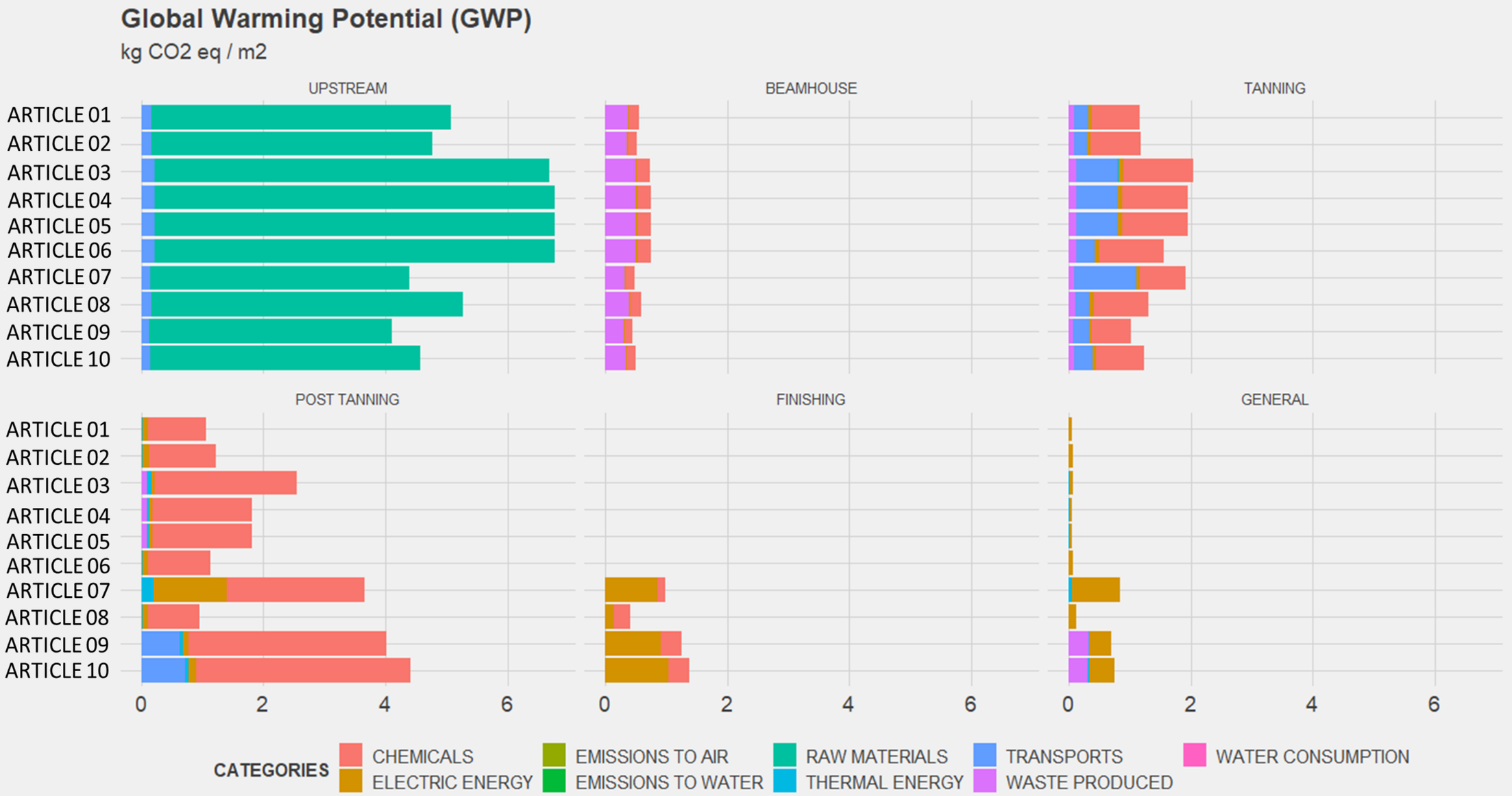
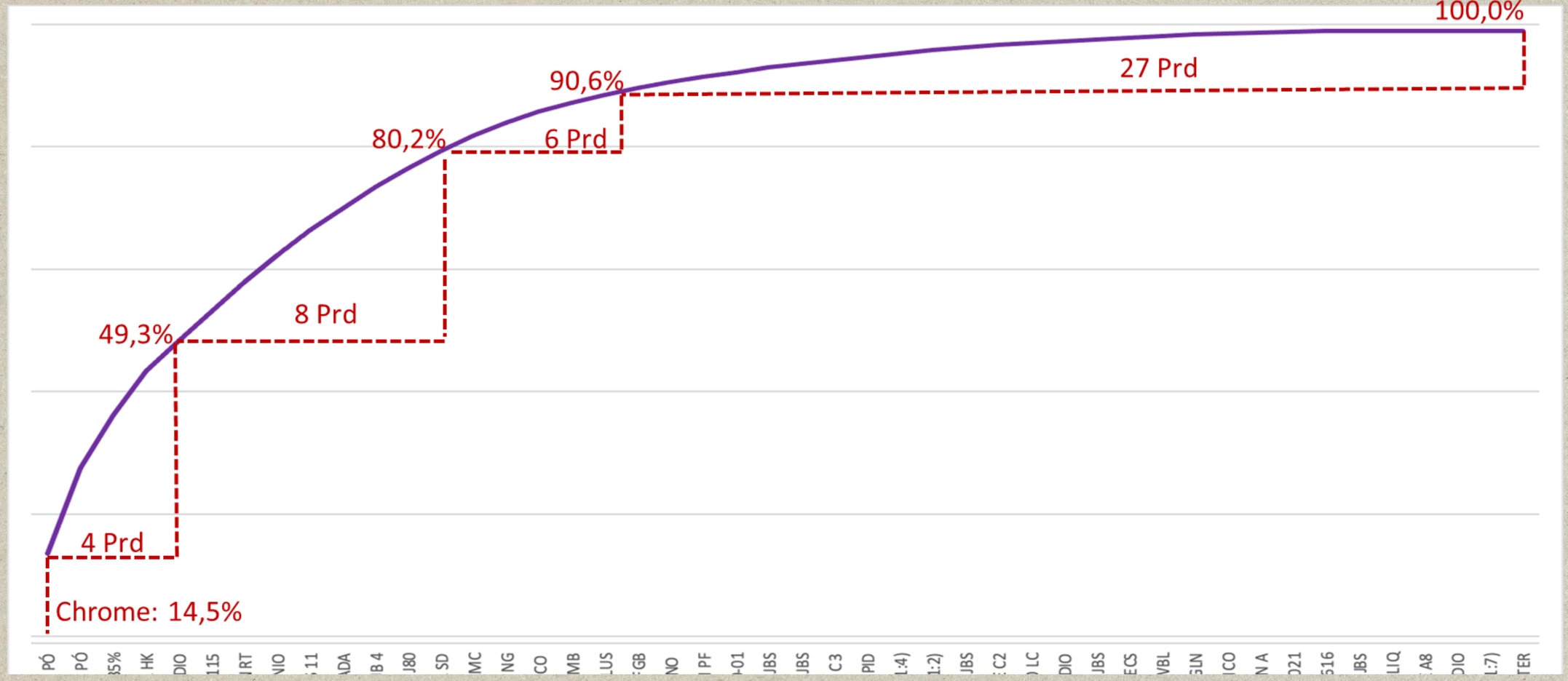
HOT *Spots*


UPSTREAM
Raw Material 53%
CORE
Chemicals 31%
Waste produced 7%
Transport 6%
Electric Energy 2%
Other

Exploratory *Data Analysis*

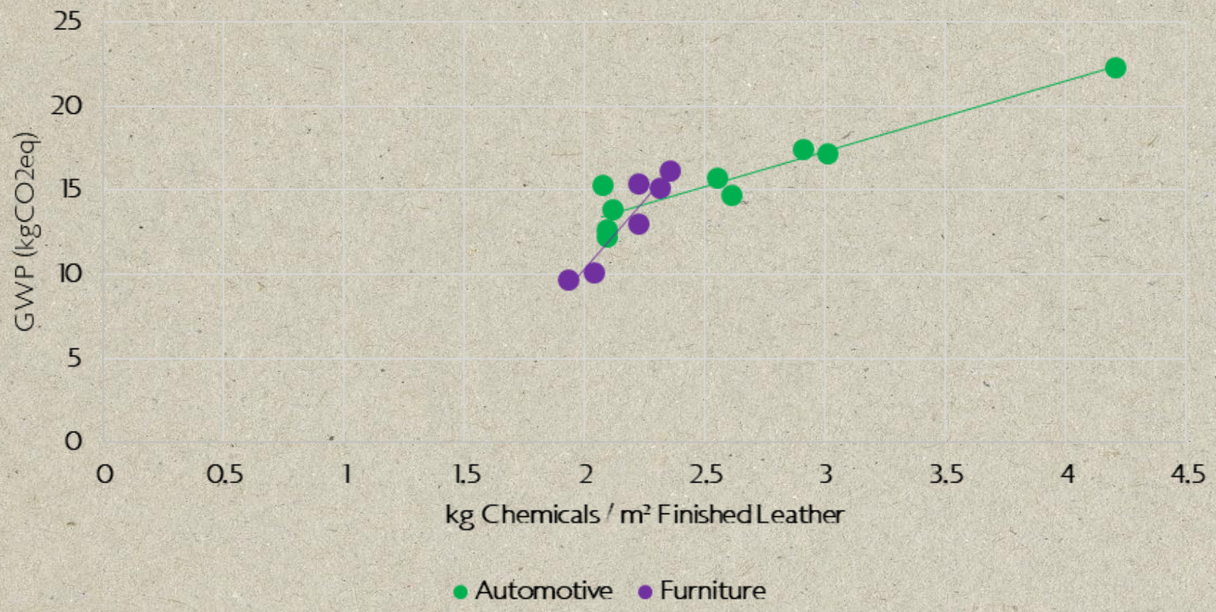


Exploratory *Data Analysis*

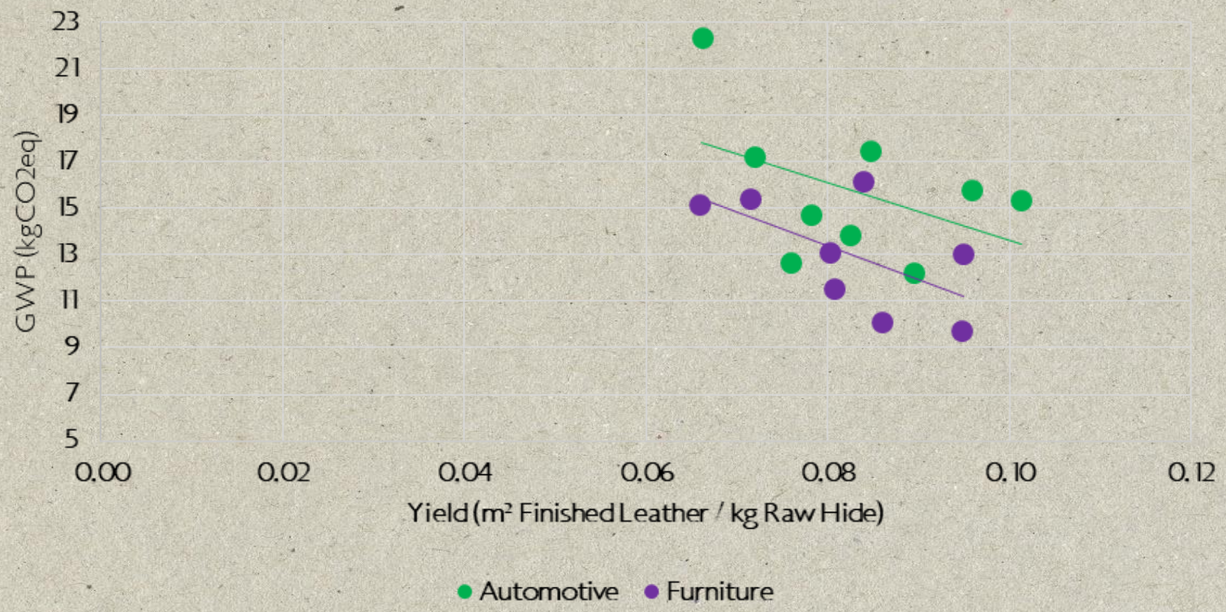


Exploratory *Data Analysis*

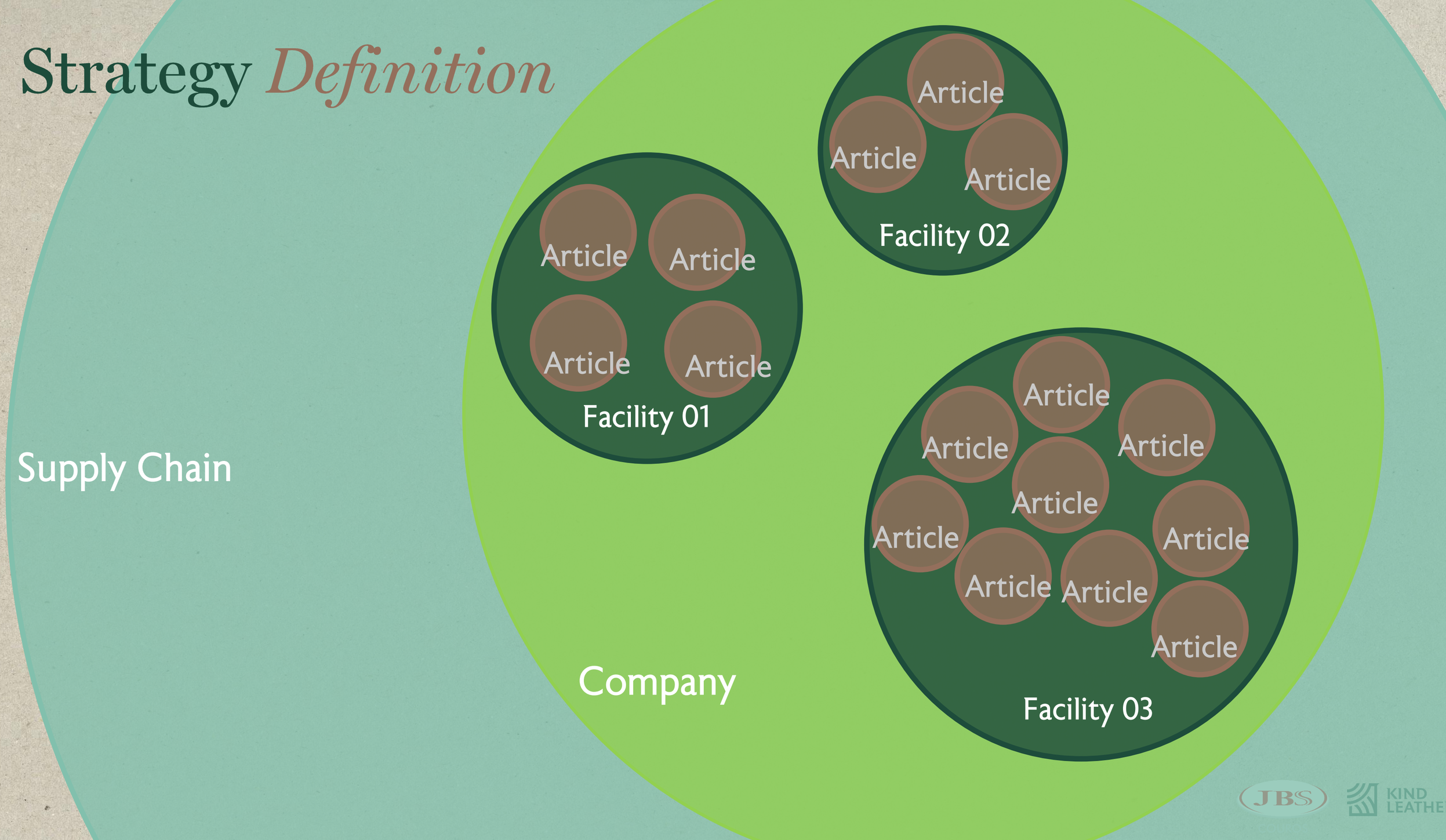
Chemicals x GWP



Yield x GWP



Strategy *Definition*



Strategy *Definition*

1 production facility

ARTICLE	% PRODUCTION	LCA AVAILABLE?
BUFFED 01	20%	YES
BUFFED 02	10%	NO
FULL GRAIN 01	8%	NO
FULL GRAIN 02	7%	YES
FULL GRAIN 03	6%	NO
KL FULL GRAIN 01	5%	NO
KL FULL GRAIN 02	5%	YES
KL FULL GRAIN 03	4%	YES
FULL GRAIN 04	4%	YES
LOW ODOR FULL GRAIN 01	4%	NO
FULL GRAIN 05	4%	YES
KL FULL GRAIN 04	3%	YES
	80%	

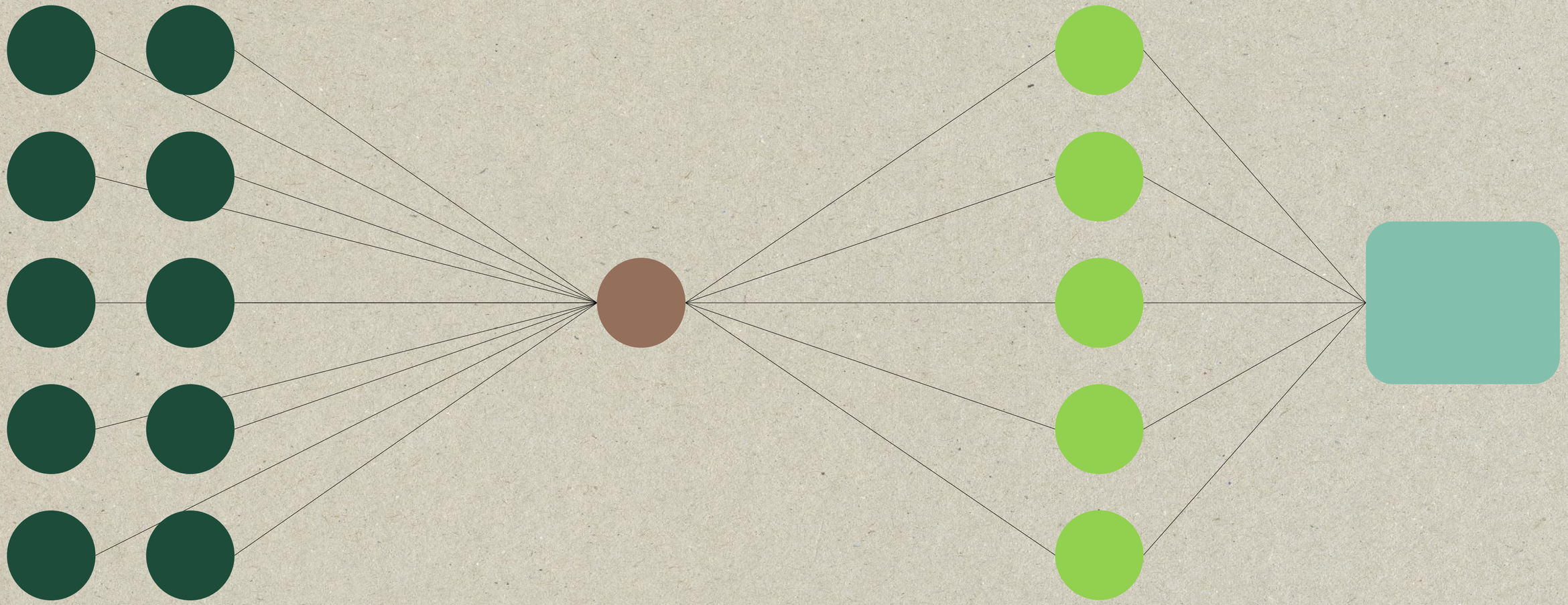
Run new LCAs

or

Define adequate proxies from similar articles

Strategy *Definition*

10 Beamhouse Plants | **1 Distribution Center** | **5 Crust / Finishing Plants** | **Customer**



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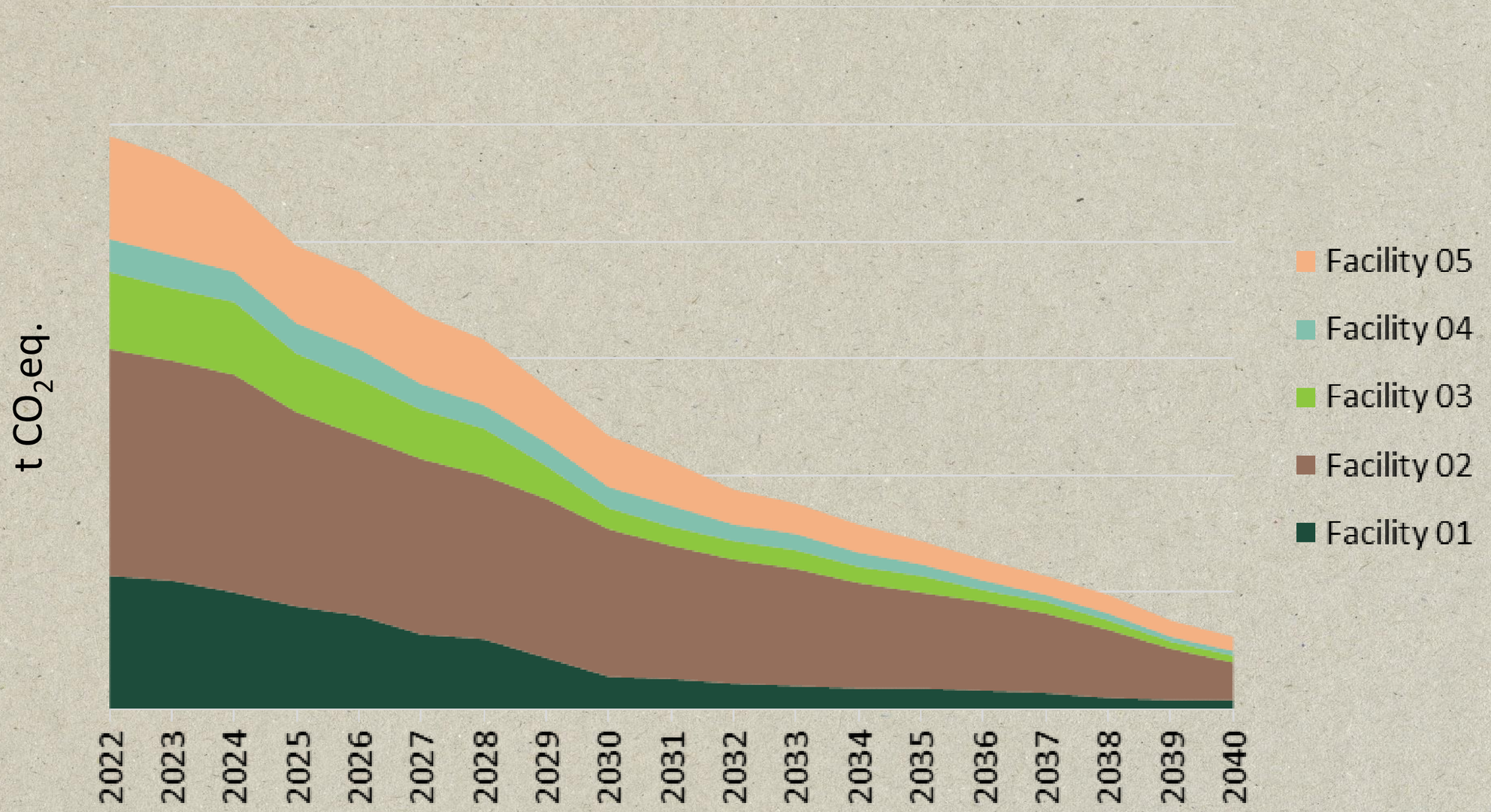
Strategy *Definition*



KEY ACTIONS *Identified*

1. **PROCESS IMPROVEMENT** THROUGH ENVIRONMENTAL SIMULATION

2. ASSESS THE **IMPACT OF CHEMICALS**

3. FOCUS ON THE **NET SURFACE AREA**

4. GENERATE INFORMATION ON THE **IMPACT OF ANIMAL FARMING**

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1. **PROCESS IMPROVEMENT** THROUGH ENVIRONMENTAL SIMULATION

WHAT IF we replace this chemical

WHAT IF we increase the net surface area

WHAT IF we use less water in retanning

WHAT IF we use less steam

WHAT IF we rethink the supply chain

KIMPI	IPCC GWP 100a				
	AS IS		TO BE		Δ
	kg CO2 eq	%	kg CO2 eq	%	%
Water Consumption	0,00	0%	0,00	0%	0%
Thermal Energy Consumption	0,05	3%	0,04	2%	-32%
Electric Energy Consumption	0,01	0%	0,01	0%	-26%
Chemicals Consumption	1,88	96,75%	1,86	97,71%	-1%
Water Pollutants	0,00	0%	0,00	0%	0%
Waste Water	0,00	0%	0,00	0%	-25%
Total	1,94		1,91		-2%

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2. ASSESS THE **IMPACT OF CHEMICALS**

1. Engage with suppliers to provide more information on the impact of the chemicals we source (from a LCA perspective).

2. Continuously reduce the environmental footprint added by the chemicals used

CHEMICAL SUSTAINABILITY INDEX

- LCA Impact
- ZDHC MRSL Status
- Biodegradability
- Biobased Content

SINGLE SCORE

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3. FOCUS ON THE **NET SURFACE AREA**

Beamhouse | Wet Blue

Collagen

Pharmaceutical, Cosmetic or Food Industries

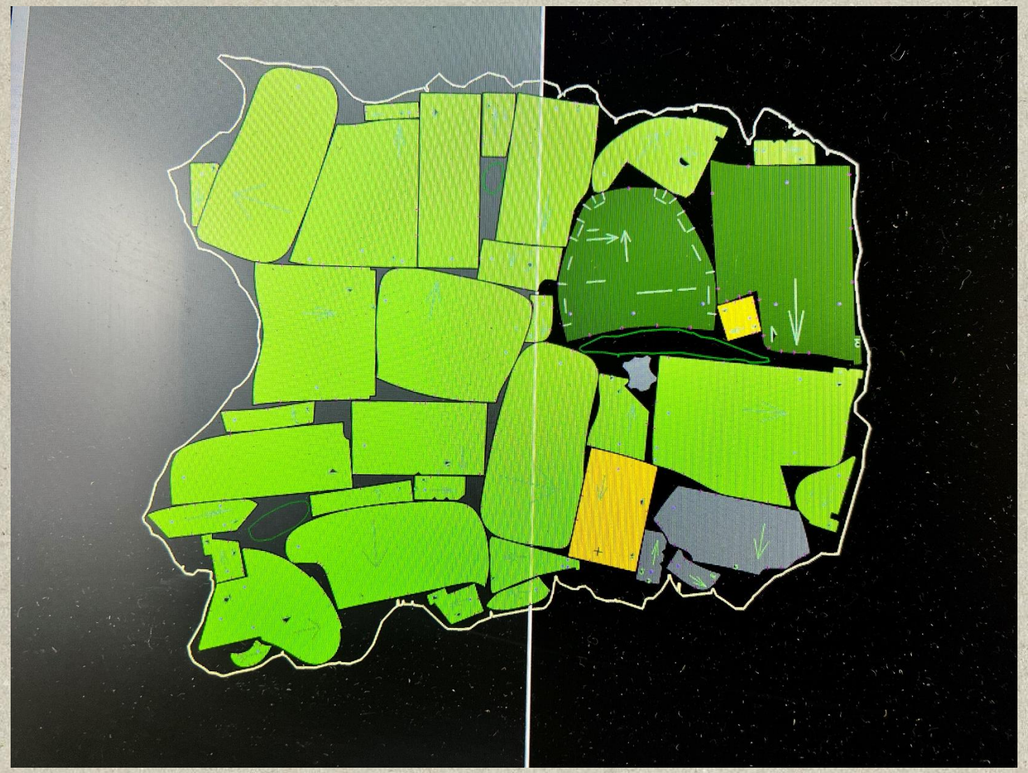
Crust and Finishing

Less waste generated

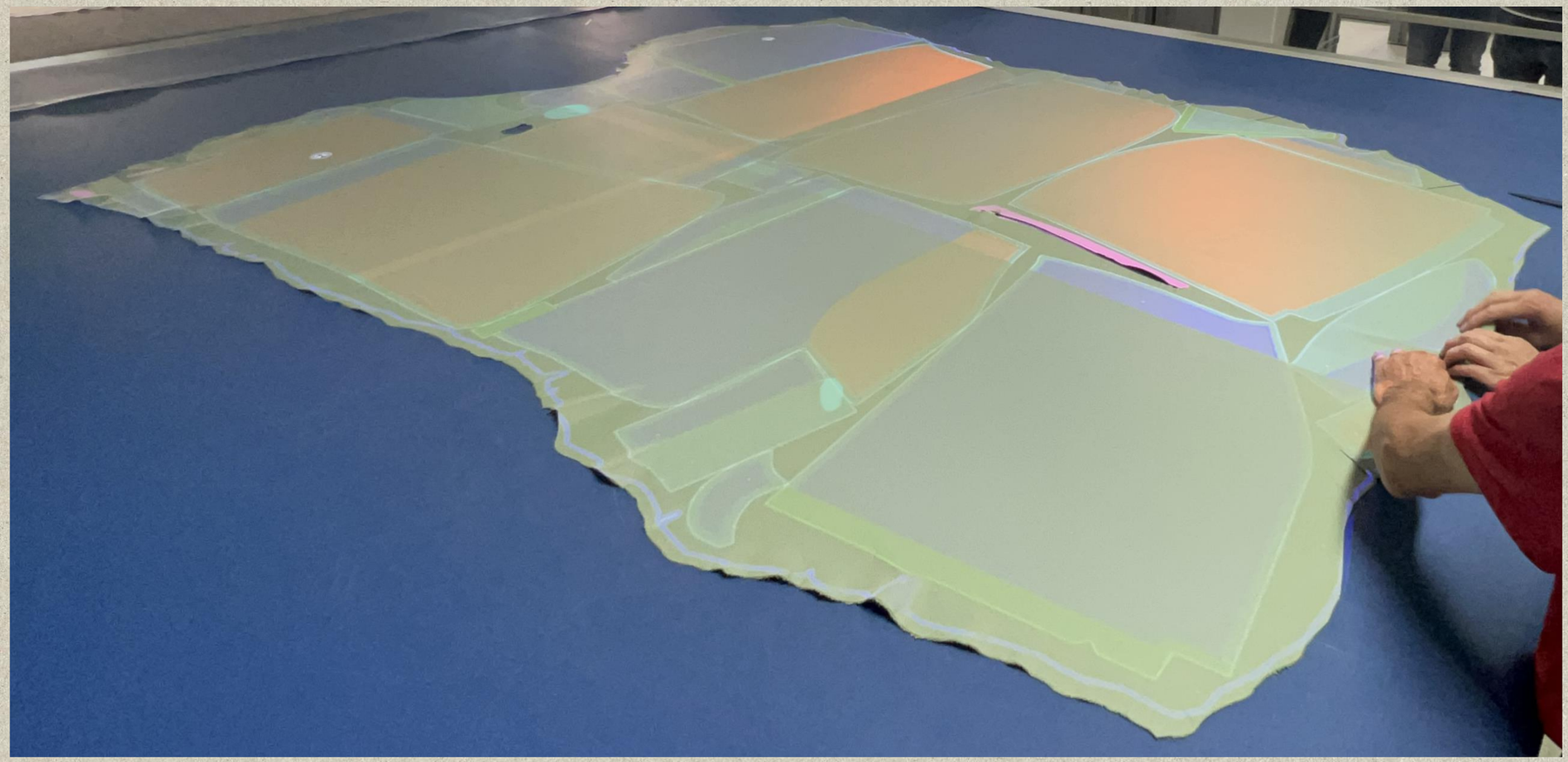
Cutting and Assembly

Higher cutting yield

3. FOCUS ON THE **NET SURFACE AREA**



3. FOCUS ON THE **NET SURFACE AREA**



4. ENGAGE WITH SUPPLIERS AND GENERATE INFORMATION ON THE **IMPACT OF ANIMAL FARMING**

FAZENDA NOTA 10

Program with tools to allow ranchers to improve management and increase the efficiency of their production systems.

15%
Increase on the **ADG** (average daily gain)

23%
Increase in the stocking rate (animal unit per hectare/acre)

9%
Reduction on the cost per kg

Classes on:
- Nutrition
- Animal Reproduction
- Animal Welfare
- Pasture
- Genetics
- Management

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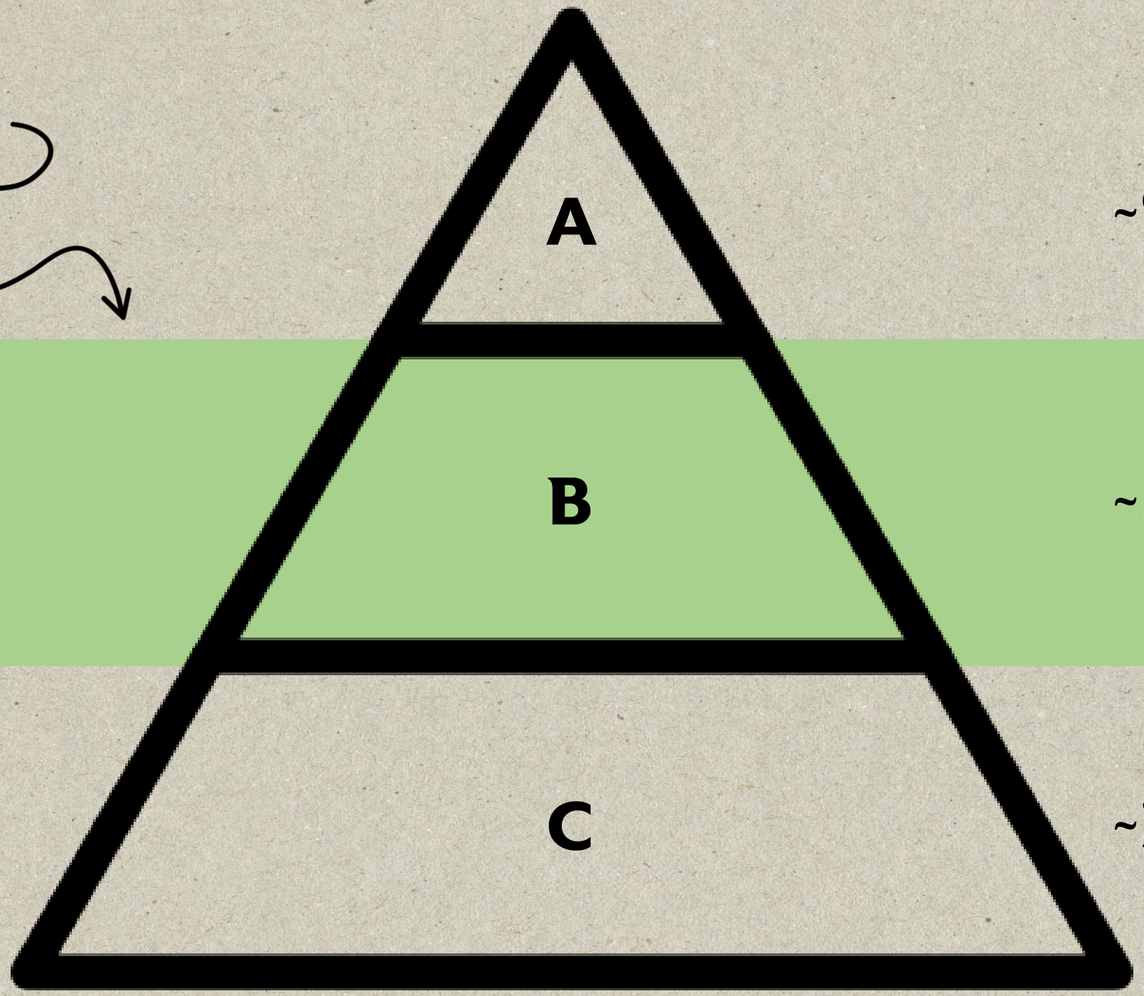
FAZENDA NOTA 10



~90 suppliers 20% volume

~5,000 suppliers 60% volume

~20,000 suppliers 20% volume

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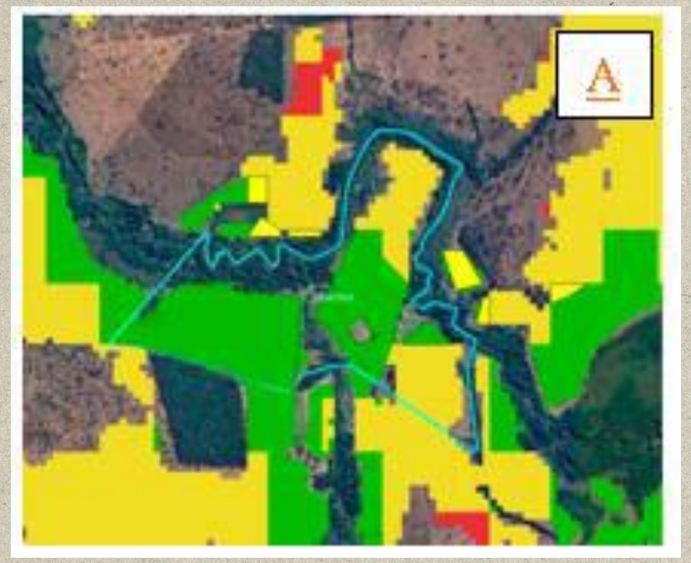
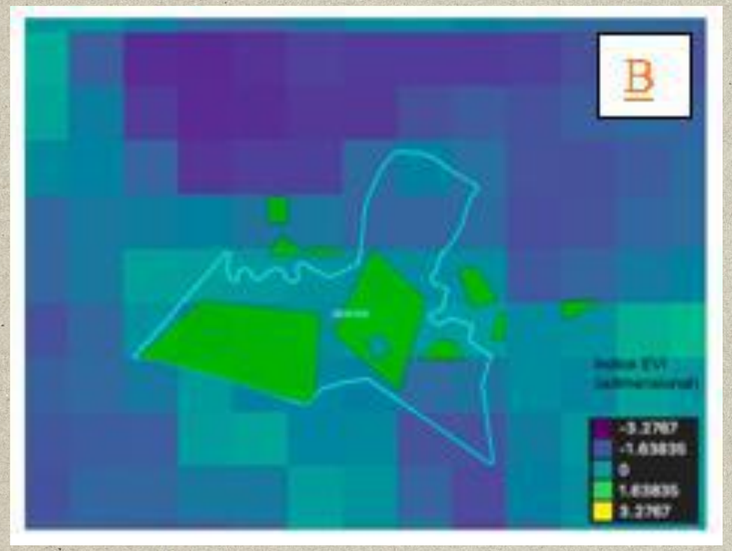
GHG Calculator *for supplying farms*

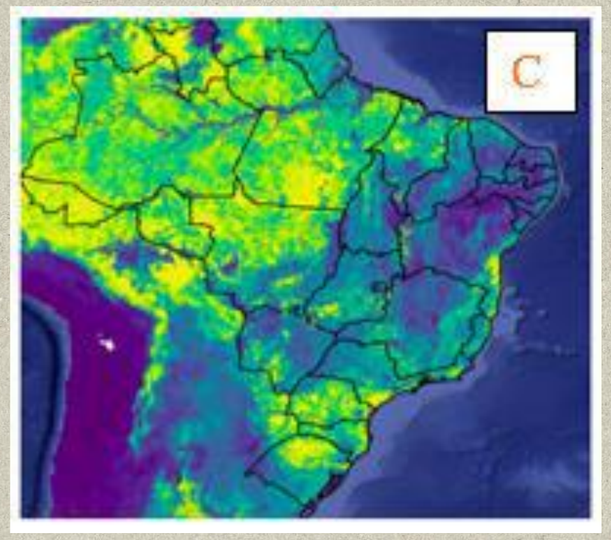


Assessment of Pasture Degradation and Land Use Change

Utilization of EVI (Enhanced Vegetation Index) for pastures to classify into:

Severely Degraded
Moderately Degraded
Non-degraded
Medium biomass
High biomass





LAPIG

MAPBIOMAS
[BRASIL]

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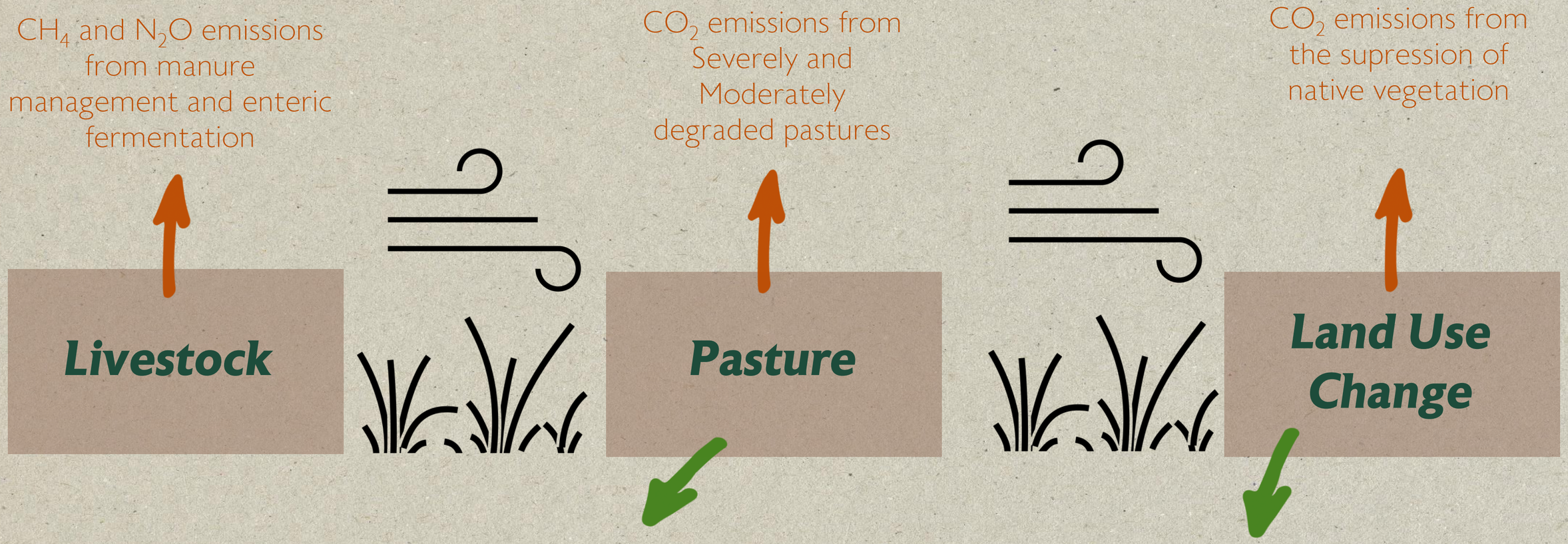
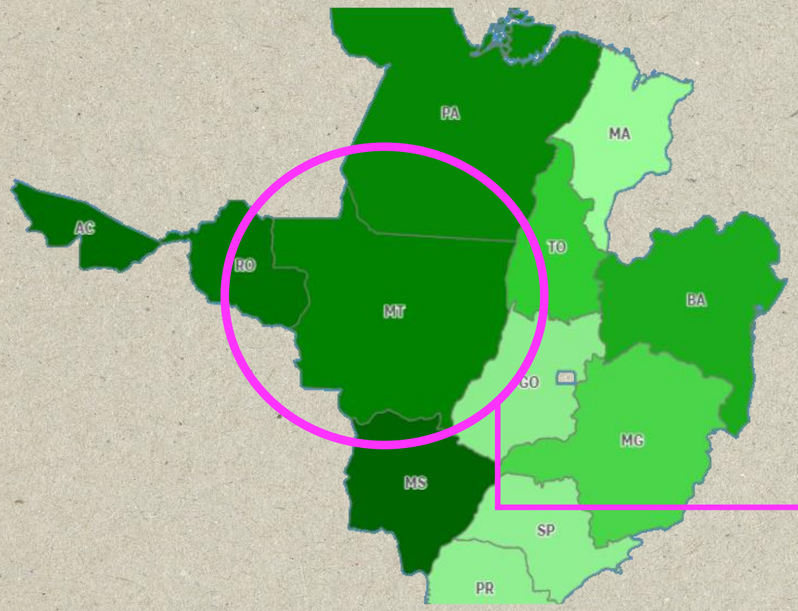
GHG Calculator *for supplying farms*

2. Sources of Emission and GHG Removal

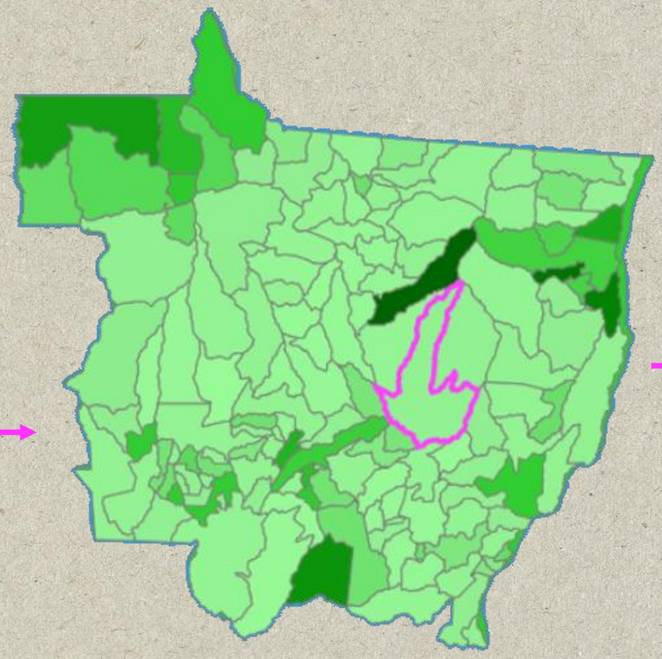


GHG Calculator *for supplying farms*

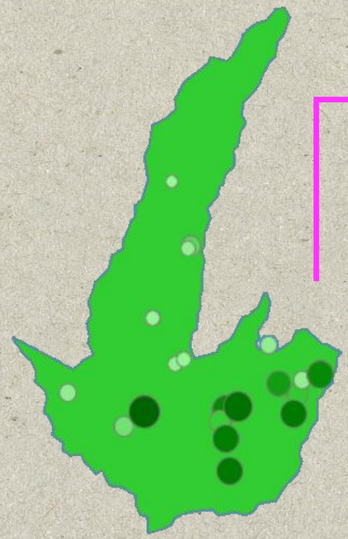
Carbon Intensity – Internal View



Country level



State level



Microregion level

Farm level

28,495
farms
assessed

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For more information:
visit our website

www.biomatcenter.org

BIOMAT

BIOMATERIALS COMPETENCE CENTER

1. **Create a shared understanding** of the environmental impacts and benefits of biomaterials manufacturing.

2. **Support harmonization** of key aspects and assessment criteria by building consensus

3. **Develop innovative tools** for the environmental impact reduction of farming and biomaterials manufacturing

4. **Support scientific publications** and raise awareness of stakeholders and the larger public

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